



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2021-0462; Project Identifier MCAI-2020-01714-T; Amendment 39-21751; AD 2021-20-13]

RIN 2120-AA64

**Airworthiness Directives; Bombardier, Inc., Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes. This AD was prompted by multiple reports of cracking of the main landing gear (MLG) shock strut lower pin. This AD requires repetitive lubrication and repetitive detailed visual inspections (DVI) and non-destructive test (NDT) inspections of the MLG shock strut lower pins, and replacement if necessary. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999;

email [ac.yul@aero.bombardier.com](mailto:ac.yul@aero.bombardier.com); Internet <https://www.bombardier.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0462.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0462; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Background**

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued TCCA AD CF-2020-54R1, dated December 23, 2020 (TCCA AD CF-2020-54R1) (also referred to after this as the Mandatory Continuing Airworthiness Information, or the MCAI), to correct an unsafe condition for certain Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes. You may examine the MCAI in the AD

docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0462.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc., Model CL-600-2B16 (604 Variant) airplanes. The NPRM published in the *Federal Register* on June 14, 2021 (86 FR 31453). The NPRM was prompted by multiple reports of cracking of the MLG shock strut lower pin part number (P/N) 19146-3. The subsequent investigation concluded that the friction torque when the shock strut is under compression loading, causes the pin anti-rotation tangs to become loaded beyond their load carrying capability. This overload condition can result in pin fracture originating at the base of the pin anti-rotation tang. Inadequate lubrication aggravates the condition. The NPRM proposed to require repetitive lubrication and repetitive DVI and NDT inspections of the MLG shock strut lower pins, and replacement if necessary. The FAA is issuing this AD to address cracking of the MLG shock strut lower pin. If not addressed, this condition could result in structural failure of one or both MLG. See the MCAI for additional background information.

### **Comments**

The FAA gave the public the opportunity to participate in developing this final rule. The FAA received no comments on the NPRM or on the determination of the cost to the public.

### **Conclusion**

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. The FAA has determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and

- Do not add any additional burden upon the public than was already proposed in the NPRM.

### **Related Service Information under 1 CFR Part 51**

Bombardier, Inc., has issued the following service information:

- Service Bulletin 604-32-030, dated June 30, 2020.
- Service Bulletin 605-32-007, dated June 30, 2020.
- Service Bulletin 650-32-004, dated June 30, 2020.

This service information describes procedures for lubricating, inspecting (DVI and NDT inspections for cracking and damage, including fracture of the MLG shock strut lower pin at the pin rotation tang location), and replacing the MLG shock strut lower pin. These documents are distinct since they apply to different airplane configurations. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

The FAA estimates that this AD affects 433 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs for required actions**

<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
7 work-hours X \$85 per hour = \$595	\$0	\$595	\$257,635

The FAA estimates the following costs to do any necessary on-condition actions that would be required based on the results of any required actions. The FAA has no way of determining the number of aircraft that might need these on-condition actions:

### Estimated costs of on-condition actions

Labor cost	Parts cost	Cost per product
6 work-hours X \$85 per hour = \$510	\$2,435	\$2,945

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

#### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2021-20-13 Bombardier, Inc.:** Amendment 39-21751; Docket No. FAA-2021-0462;  
Project Identifier MCAI-2020-01714-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER  
DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Bombardier, Inc., Model CL-600-2B16 (604 Variant)  
airplanes, serial numbers (S/N) 5301 through 5665 inclusive, 5701 through 5988  
inclusive, and 6050 through 6999 inclusive, certificated in any category.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 32, Landing gear.

#### **(e) Unsafe Condition**

This AD was prompted by multiple reports of cracking of the main landing gear  
(MLG) shock strut lower pin. The FAA is issuing this AD to address cracking of the  
MLG shock strut lower pin. If not addressed, this condition could result in structural  
failure of one or both MLG.

#### **(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

#### **(g) Repetitive Lubrication**

Within 200 flight hours (FH) or 12 months after the effective date of this AD, whichever occurs first, lubricate the left-hand (LH) and right-hand (RH) MLG shock strut lower pins having part number (P/N) 19146-3, in accordance with paragraph 2.B., “Part A,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 200 FH or 12 months, whichever occurs first.

(1) For airplanes having S/N 5301 through 5665 inclusive: Bombardier Service Bulletin 604-32-030, dated June 30, 2020.

(2) For airplanes having S/N 5701 through 5988 inclusive: Bombardier Service Bulletin 605-32-007, dated June 30, 2020.

(3) For airplanes having S/N 6050 through 6999 inclusive: Bombardier Service Bulletin 650-32-004, dated June 30, 2020.

**(h) Repetitive Detailed Visual Inspections (DVI)**

At the applicable compliance time specified in paragraphs (h)(1) through (3) of this AD, perform the DVI for cracking and damage of the LH and RH MLG shock strut lower pins having part number (P/N) 19146-3, in accordance with paragraph 2.C., “Part B,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 400 FH or 24 months, whichever occurs first. If the DVI coincides with a non-destructive testing (NDT) inspection required by paragraph (i) of this AD, the NDT inspection supersedes the DVI for that interval only. If the accumulated flight cycles (FC) of the MLG shock strut lower pin are not known, use the related MLG assembly accumulated FC to determine when to accomplish the actions required by this paragraph.

(1) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD and on which



an MLG shock strut lower pin has accumulated fewer than 600 total FC on the pin as of the effective date of this AD: Before the accumulation of 750 total FC on the pin.

(2) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD and on which an MLG shock strut lower pin has accumulated 600 total FC or more on the pin as of the effective date of this AD: Within 150 FC after the effective date of this AD.

(3) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of this AD: Before the accumulation of 750 total FC.

**(i) Repetitive NDT Inspection**

At the applicable compliance time specified in paragraphs (i)(1) through (4) of this AD: Perform the NDT inspection for cracking and damage of the LH and RH MLG shock strut lower pins having P/N 19146-3, in accordance with paragraph 2.D., “Part C,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD. Repeat thereafter at intervals not to exceed 900 FC. If the accumulated FC of the MLG shock strut lower pin is not known, use the related MLG assembly accumulated FC to determine when to accomplish the actions required by this paragraph.

(1) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD and on which an MLG shock strut lower pin has accumulated fewer than 1,200 total FC on the pin as of the effective date of this AD: Before the accumulation of 1,500 total FC on the pin.

(2) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD and on which an MLG shock strut lower pin has accumulated 1,200 total FC or more but fewer than 2,000 total FC on the pin as of the effective date of this AD: Within 300 FC after the

effective date of this AD, or before the accumulation of 2,200 total FC on the pin, whichever occurs first.

(3) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD and on which an MLG shock strut lower pin that has accumulated 2,000 total FC or more on the pin as of the effective date of this AD: Within 200 FC after the effective date of this AD.

(4) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of this AD: Before the accumulation of 1,500 total FC.

**(j) Replacement**

If, during any inspection required by this AD, any crack or damage of the MLG shock strut lower pin is detected, before further flight, replace the affected MLG shock strut lower pin with a new part in accordance with paragraph 2.E., “Part D,” of the Accomplishment Instructions of the applicable service bulletin, as specified in paragraphs (g)(1) through (3) of this AD.

**(k) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(l) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) TCCA AD CF-2020-54R1, dated December 23, 2020, for related information. This MCAI may be found in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0462.

(2) For more information about this AD, contact Chirayu Gupta, Aerospace Engineer, Mechanical Systems and Administrative Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

**(m) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier Service Bulletin 604-32-030, dated June 30, 2020.

(ii) Bombardier Service Bulletin 605-32-007, dated June 30, 2020.

(iii) Bombardier Service Bulletin 650-32-004, dated June 30, 2020.

(3) For service information identified in this AD, contact Bombardier, Inc., 200 Côte-Vertu Road West, Dorval, Québec H4S 2A3, Canada; North America toll-free

telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; email

ac.yul@aero.bombardier.com; Internet <https://www.bombardier.com>.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on September 21, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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